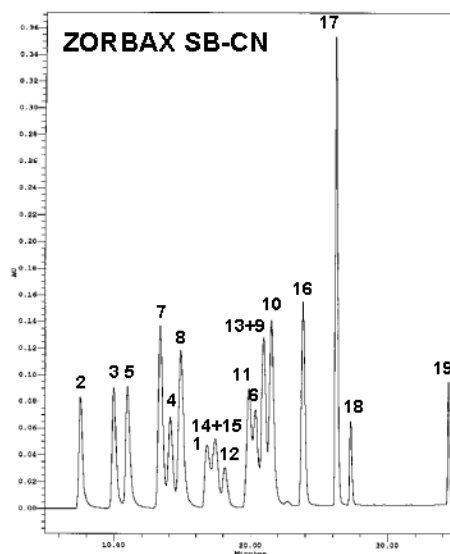
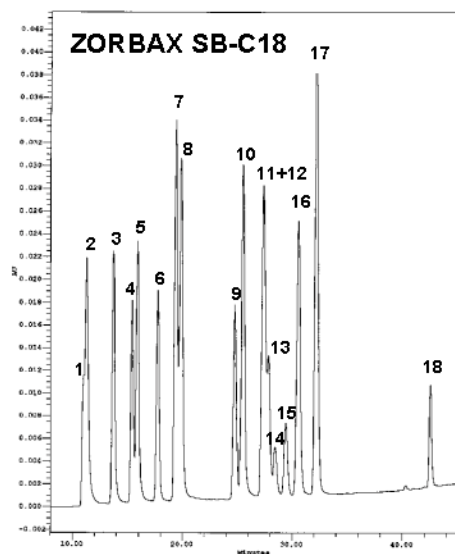


Qualitative and Quantitative Analysis of Explosives and Related Compounds Using Polar and Nonpolar HPLC Columns

Application
Environmental
Robert Ricker



Courtesy of Th. Renner, Hess. Landesanstalt f. Umwelt, Dez. III/2, P.O. Box 3209, 65022 Wiesbaden, Germany

Conditions:
ZORBAX® SB-C18, SB-CN (2.1 x 150 mm) (Agilent P/N: 883700.905, 883700.922)
Mobile Phase: A: ACN + 5% H₂O + 5 mM CF₃COONH₄
B: H₂O + 5% ACN + 5 mM CF₃COONH₄
pH 2.7 (CF₃COOH)
Inject: 10 µL of 19 nitromethanes in ACN:H₂O (20:80), 5mM CF₃COONH₄;
0.23mL/min, 18°C, Detect. UV(210, 240, 360 nm)



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Gradient Shapes

ZORBAX[®] SB-C18 (2.1x150 mm) (P/N:883700.922)
Sample: 0.5ng / µL

Time [min]	Flow [mL/min]	% A [%]	% B [%]
0	0.23	20	80
2	0.23	20	80
10	0.23	30	70
20	0.23	35	65
25	0.23	40	60
35	0.23	70	30
40	0.23	70	30
42	0.23	20	80
45	0.23	20	80

ZORBAX[®] SB-CN (2.1x150 mm) (P/N:883700.905)
Sample: 5ng / µL

Time [min]	Flow [mL/min]	% A [%]	% B [%]
0	0.23	20	80
1	0.23	20	80
15	0.23	30	70
30	0.23	80	20
35	0.23	80	20
37	0.23	20	80
40	0.23	20	80

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Table 1 - List of Analytes

	Compound	Rt [min] on Zorbax SB-C18	Rt [min] on Zorbax SB-CN	Quantitation on Zorbax SB
1	picric acid	11.02	16.82	CN (360 nm)
2	4-amino-2-nitrotoluene	11.31	7.57	C18 (240 nm)
3	2-amino-6-nitrotoluene	13.72	10.00	C18 (240 nm)
4	RDX	15.42	14.13	C18 (210 nm)
5	2-amino-4-nitrotoluene	15.92	11.02	C18 (240 nm)
6	HMX	17.76	20.37	C18 (210 nm)
7	1,3-dinitrobenzene	19.41	13.40	CN (240 nm)
8	1,3,5-trinitrobenzene	19.87	14.90	CN (240 nm)
9	2-amino-4,6-dinitrotoluene	24.79	20.98	C18 (240 nm)
10	2,4-dinitrotoluene	25.52	21.55	C18 (240 nm)
11	4-amino-2,6-dinitrotoluene	27.37	19.90	CN (240 nm)
12	2-nitrotoluene	27.41	18.13	CN (240 nm)
13	2,6-dinitrotoluene	27.84	20.87	C18 (240 nm)
14	4-nitrotoluene	28.47	17.39	C18 (240 nm)
15	3-nitrotoluene	29.46	17.43	C18 (240 nm)
16	2,4,6-trinitrotoluene	30.59	23.85	CN (240 nm)
17	tetryl	32.22	26.30	CN (240 nm)
18	diphenylamine	42.59	27.32	CN (210 nm)
19	hexyl	45.78	34.45	CN (360 nm)

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Printed in the USA

April 25, 2002

5988-6345EN



Agilent Technologies